A CORRELATIVE STUDY OF SINUSITIS VERSUS HEADACHE

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ABSTRACT : *Headache is a very annoying condition for patients and also for those trying to treat it. Headaches can be of sinugenic origin, even if this cause may not be suspected from the case history.Average age of onset for sinugenic headache is 25 to 30 years. Sinugenic headache occurs equally in both sexes. Diagnosis of sinugenic headache is done by the clinical history, examination of nose and paranasal sinuses and relevant investigations besides excluding the headaches of nonsinugenic and psychogenic cause. Surgical treatment is helpful in curing the patients of sinugenic headaches in most of the cases. Only two patients could benefit with medical treatment. Recurrences are common in patients of headaches of multiple etiology, and more if not treated specifically.*

INTRODUCTION

Headache is a common symptom It is considered to be pain felt to be somewhere in the head It can be a very annoying symptom for the patient and also for those trying to treat them Headache can be primary or the presenting symptom of many diseases or it may appear in conjunction with various conditions and disease entities Headache is a symptom, not a disease It is a complaint, not a diagnosis It is an indication of provocative cause just as fever or elevated blood pressure reflect an underlying aberration

A practical classification of headache that encompasses nearly all clinical states is suggested as follows

1 Head pain due to intracranial disease

2 Head pain due to vascular or blood disorders

A) Alterations of vascular dynamics, vasodilating headache
Migraine headache
Histamine Cephalgia (Horton)
B) Inflammation of blood vessels
Temporal arteritis
Carotidynia
C) Alterations of formed elements of blood
Disorders of hematopoiesis

3 Concussive headache

4 Functional headache

Psychogenic headache(Conversion reaction)
Tension headache (anxiety)

5 Neuralgias of the head and neck

Major Trigeminal, glossopharyngeal
Minor Superior Laryngeal, Tympanic (Reichert), Geniculate (Hunt), Occipital, Post herpetic ophthalmic

6 Toxic Headache

Endogenous sources
Exogenous sources

7 Myoarthropathies producing Craniocervicodynia

A) Cervico-Occipital syndrome, Cervical arrthritis, Herniation of nucleus pulposus, Cervical trauma
B) Temporomandibular joint dysfunction malocclusion, Bruxism
C) Scalenus anticus muscle syndrome
D) Cervical rib syndrome
E) Muscle tension headache

8 Ocular causes of head pain

Refractive anomalies

Myopia, Hyperopia
Astigmatism,

Muscle imbalance

Strabismus,
Intra or extraocular pathology

Iritis
Glaucoma

9 Epilepsy

10 Allergy

11 Otorhinolaryngologic causes of head and neck pain

The pain arising from stimulation of the mucosal lining of nose and PNS is chiefly referred to areas of the head supplied by the second division of 5th cranial nerve, and only to a lesser degree to those parts innervated by the first division Stimulation of the nasal structures elicited

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no pain at the site of stimulation in patients with complete section of 5th root (Diagram-I)

Stimulation of the nasal or sinus mucosa is likely to be reported as pain in the temple, zygoma, inner canthus of the eye, forehead, teeth, occiput or vertex This phenomenon has been theorized to result from the liberation of vasoactive amines in afferent sensory neural fibres It has been demonstrated that the afferent nerve fibres of sinus and nasal origin terminate in the sensory nucleus of the 5th cranial nerve along with the afferent sensory fibres from the skin supplied by the trigeminal nerve This may explain misinterpretation by the sensory cortex, which cannot always distinguish skin from sinus mucosal stimulation

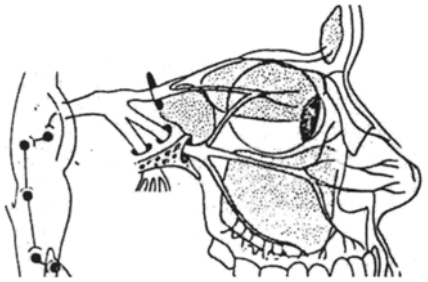

Diagram -I Diagram of sensory innervation of the paranasal sinuses by branches of the trigeminal nerve Note the dual innervation of the ethmoid and sphenoid sinuses by maxillary and ophthalmic divisions Note also the brain stem connection between the chief-sensory mucleus of cranial nerve v and the mucleus of cranial nerve x

The axon reflex has important implications in the understanding of the physiology of nasal and sinus response to infection or similar stimuli Briefly, neuroactive amines are known to be secreted at both ends of the sensory neuron, these amines include both norepinephrine and acetylcholine The orthodromic component of the axon reflex is mediated by the "c" fibres and is responsible for the central nervous system reflexes, whereas the antidromic impulse is concerned with peripheral reflexes While the orthodromic component supplies the brain with the proper reception of pain, the antidromic reflex results in vasodilatation, extravasation of plasma hypersecretions This would help explain the reason that nasal pain or sinusitis is often associated with rhinorrhea, engorgement of the nasal and sinus mucosa, and bloody nasal discharge (Diagram-II)

Headache and facial pain related to infection or obstruction of the out flow tracts of para-nasal sinuses are com-

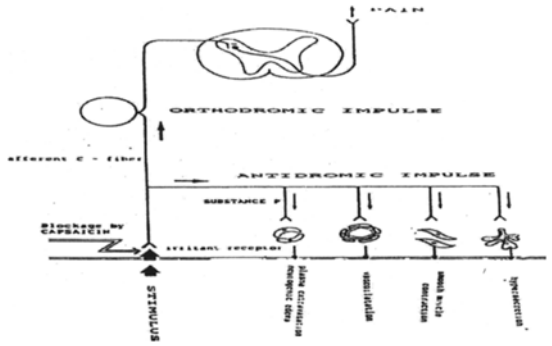

Diagram -II Diagram of Axon reflex showing local effects of antidromic impulse in nasal mucosa

mon complaints of patients with both acute and chronic sinusitis While many symptoms ascribed to the sinuses are not caused by sinusitis, the localization of facial pain and headache, to the involved sinus tends to confirm the headache referred to the vertex or other parts of cranium Pain in frontal region is often a symptom of frontal sinusitis, pain between the eyes a symptom of ethmoiditis, and pain and tenderness relating to maxilla on either side may be symptoms of acute maxillary sinusitis In pansinusitis, pain may be coalescent, less localized, and associated with intermittent frontal headache and a constant sensation of pressure

A fairly constant characteristic of headaches related to the sinuses is their occurrence on awakening, the result of accumulation of purulent or mucoid fluid in sinuses creating pressure symptoms of the sensitive mucosa overlying the sinuses and sinus orifices Pain is intensified by pressure changes including postural changes, blowing, and barotrauma, particularly on descent while flying

Headache and facial pain may be absent in the patient with chronic sinusitis, but they are often the chief complaints in acute sinusitis The patient with chronic sinusitis may complain of chronic headaches with vague pressure symptoms or be totally asymptomatic until a complication of sinusitis such as an abscess, mucocele, or meningitis supervenes

OBSERVATION & DISCUSSION

A clinical study of 200 patients complaining of headache reporting either in ENT-OPD or admitted in ENT-wards of J N Medical College, A M U , Aligarh, was undertaken from Jan 1994 to Oct 1996

Age Majority of cases fell in age group of 10-30 years (Fig I)

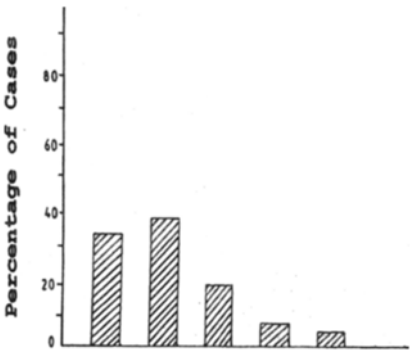

Fig I Headache in relation to age groups

Sex Both the sexes were affected equally with a slight preponderance of male patients (53%) (Fig II)

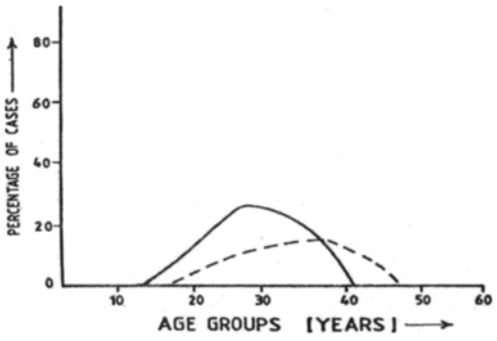

Fig II Headache in relation to Sex

Headache is a very annoying symptom for patients and also for those trying to treat them Headaches can be of sinugenic origin even if this cause may not be suspected from the case history

Clinically headache has been divided into three groups -

i) Those with headaches clearly connected to either some sinus problems or in whom there seems to be the overt indication of sinus disease in 23%

ii) Those with headaches clearly traceable to nonsinus causes such as Migraine, cervical spine disorders, vascular disorders, ophthalmic refraction problems etc in 69% cases

iii) Psychogenic headache in 8% cases

Diagnosis of sinugenic headache is done by the clinical history, examination of nose and paranasal sinuses and relevant investigations besides excluding the headaches of nonsinugenic and psychogenic cause

Recurrence are common in patient of headaches of multiple etiology, and more if not treated specifically

Localization of Headache Majority of patients complained of headache in the region of forehead (43%) Headache was experienced at the site of glabella and temporal regions in 12% and 17% respectively A small percentage of patients (9%) demonstrated headache at the top of head (Fig III)

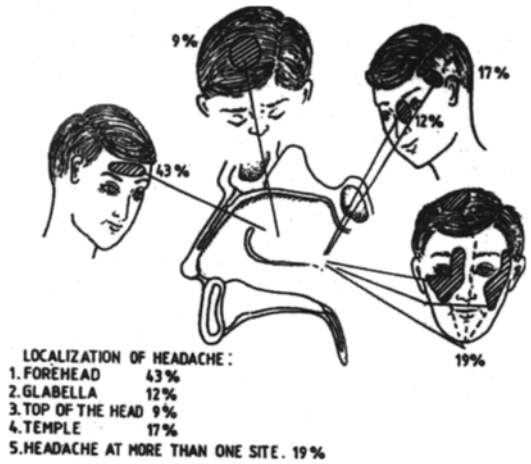

Fig III Localization of Headache 1 Forehead 43%, 2 Glabella 12%, 3 Top of the head 9%, 4 Temple -17%, 5 Headache at more than one site 19%

Surgical Intervention Caldwell-Luc's operation was performed in 12% of cases and intranasal polypectomy was required in 3% cases Out of all cases, antral puncture was done in 3% cases bilaterally and there was mucopurulent wash, 5% cases had purulent antral wash unilaterally Intranasal antrostomy on left side was done in two cases

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